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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Adrianus Johannes Van Der Leest

2002-1032

9461

466

7590

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EXAMINER

IRVIN, THOMAS W

ART UNIT

PAPER NUMBER

3657

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/581,079	Applicant(s) VAN DER LEESE ET AL.	
	Examiner THOMAS W. IRVIN	Art Unit 3657	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 and 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-18 and 20 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05 June, 2009 has been entered.

Claim Objections

Claim 1 objected to because of the following informalities: "substantially the" in line 16 should be changed to read -- the substantially --. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 14-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to

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which it pertains, or with which it is most nearly connected, to make and/or use the invention. The drawings and specification do not provide support for the claimed change in the coefficient of friction of the pulley in relation to a radial position.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 14-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 14, 15, and 16 recite the limitation "the location" in lines 22, 5, and 9. There is insufficient antecedent basis for these limitations in the claims.

In Re claim 17, the claim language "substantially corresponds to the contour shown" renders the claim indefinite because it is unclear what limitations are included or excluded in the figure.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7, 9-13, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Durum (5,328,412) in view of Brandsma et al. (2003/0144097).

In Re claim 1, Durum discloses, with reference to fig. 1, a CVT for a motor vehicle, comprising: a drive belt (6) having running surfaces (36); a primary pulley (10) with two conical pulley sheaves (20,22); a secondary pulley (12) with two conical pulley sheaves (24,26), wherein the belt is wound around the primary and secondary pulleys and clamped therebetween by the primary and secondary pulley's clamping forces to transmit a supplied torque, the sheaves of the pulleys having a convex curvature, the curvature varying in relation to a radial position such that the angle is at a highest value at a location of a radially outermost position on the sheaves. Durum fails to disclose specifics of the clamping forces.

Brandsma et al. teach changing the clamping force of one of the pulleys (2,3) to depart from a clamping force equilibrium to change the running radius of the belt around the pulleys and the CVT ratio (see par. 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have controlled the CVT of Durum by changing the clamping force ration between the primary and secondary pulleys, as taught by Brandsma et al., to efficiently and effectively control the CVT ratio between the primary and secondary pulleys.

Examiner notes that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have controlled the CVT of Durum to any appropriate clamping ratio, including a ratio between 1 and 1.8, between the primary and secondary pulleys, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

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In Re claims 2, 3, and 20, the CVT as modified, appears to be meet the limitations of the claim in that the clamping force in the primary and secondary pulley change depending on the running radius of the drive belt, and that the clamping force becomes smaller as the running radius of the drive belt increases. Brandsma et al. fail to disclose the specific clamping forces of the pulleys. However, Brandsma et al. does disclose that the clamping force may be increased or decreased (see par. 2), and that the clamping force would be greater in an overdrive position than a low-drive position. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have any appropriate clamping ratio, including a ratio between 1.3 and 1.5, between the primary and secondary pulleys, to keep the drive belt properly engaged with the respective pulley, and to adjust the CVT to the desired transmission ratio.

In Re claims 4 and 5, Durum, as modified, fail to disclose a factor of safety. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated an appropriate factor of safety into the design of the CVT to ensure that the drive belt would not slip or the transmission fail.

In Re claims 6 and 7, see fig. 1 of Durum.

In Re claim 9, Durum fails to teach rings on the belt.

Brandsma et al. teach forming a belt (10) provided with at least one set of rings (14,15) and a number of transverse elements (13), which can move along the set of rings (12) in the circumferential direction thereof and are provided with the running surfaces (11) (see fig. 3). It would have been obvious to one of ordinary skill in the art

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at the time the invention was made to have modified the belt of Durum to include a set of rings and transverse elements, as taught by Brandsma et al., to allow for greater frictional interaction with the pulleys, and thus greater torque transfer, between the belt and the conical contact surfaces of the pulleys.

In Re claims 10 and 11, the CVT of Durum appears to meet the limitations of the claim in that the contact angle at the largest diameter is greater than the contact angle at the smallest diameter (see fig. 1).

In Re claims 12 and 13, the pulleys of Durum appear to meet the limitations of the claims, in that the contact angle of the pulley at a largest diameter is approximately 10 degrees, and that the contact angle of the pulley at the smallest diameter is approximately 7 degrees (see fig. 1).

Claims 14, and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Durum (5,328,412) in view of Yukiyoshi (JP 61-048656).

In Re claims 14 and 16, Durum discloses, with reference to fig. 1, a CVT comprising: a drive belt (6) having running surfaces (36); a primary pulley (10) with two conical pulley sheaves (20,22); a secondary pulley (12) with two conical pulley sheaves (24,26). Durum fails to disclose specifics of the clamping forces. Durum fails to teach a changing coefficient of friction on the contact surfaces of the pulleys.

Yukiyoshi teach, with reference to figs. 6 and 7, including deposits (33) on the pulley sheaves (26d,26e) such that the frictional coefficient of the pulley is increased as a diameter of the pulley is decreased.

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the pulleys of the CVT of Durum, to include frictional deposits such that the pulleys have a higher coefficient of friction at a smaller diameter portion and a lower coefficient of friction at a largest diameter portion, as taught by Yuki Yoshi, to compensate for the change in contact area, and thus friction forces present between the belt and the pulleys due to the CVT operating diameter.

In Re claim 17, the CVT of Durum, as modified, appears to meet the broad limitations of the claim, in that the contact angles of the pulleys change with respect to the transmission ration.

In Re claim 18, the CVT of Durum, as modified, appears to meet the broad limitations of the claim, in that the clamping force ratio has an at least approximately constant value.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Durum (5,328,412) in view of Yuki Yoshi (JP 61-048656) as applied to claim 14, and further in view of Tatara et al. (4,898,567).

Durum, as modified, fail to teach that a radially outermost portion of the primary pulley has a lower coefficient of friction than the radially outermost part of the secondary pulley.

Tatara et al. teach, with reference to col. 2 lines 31-46, making a driving pulley (secondary pulley) have a higher coefficient of friction at a radially outer portion than a driven pulley (primary pulley). It would have been obvious to one of ordinary skill in the

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art at the time the invention was made to have modified the CVT of Durum, as modified, to have differing frictions between the primary and secondary pulley, as taught by Tatara et al., so as to reduce the roaring or buzzing noise when the CVT is at a hi/low transmission ratio.

Allowable Subject Matter

Claim 8 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments, see Remarks, filed 05 June 2009, with respect to the rejection(s) of claim(s) 14-18 under 35 U.S.C. 103(a) to Durum in view of Brandsma et al. have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Nakajima (JP 2001-343056) and Tatara et al. (4,898,567).

Applicant's arguments with respect to the rejection(s) of claim(s) 1-7, 9, and 20 under 35 U.S.C. 103(a) to Durum in view of Brandsma et al. have been fully considered but they are not persuasive.

In response to applicant's arguments that a declaration was submitted, the examiner points out that no declaration is found in the application. Additionally, the examiner points out that even if a declaration was entered, and was correct, applicant

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appears to be arguing that the value of 1 is not inclusive in a range of less than 1 to more than 1.8, which is incorrect. Furthermore, applicant has not defined what the "largest transmission ratio" is.

Examiner further notes that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have controlled the CVT of Durum to any appropriate clamping ratio, including a ratio between 1.3 and 1.5, between the primary and secondary pulleys, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

In response to applicant's arguments concerning claims 12 and 13, the examiner points out that "approximately 7 degrees" does not mean exactly 7 degrees, and that the limitations of the claim are very broad because of "approximately".

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THOMAS W. IRVIN whose telephone number is (571)270-3095. The examiner can normally be reached on Mon-Fri 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on (571) 272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thomas W. Irvin/
Examiner, Art Unit 3657

/Robert A. Siconolfi/
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